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The purpose of this study was to conduct a policy analysis of the Army's inpatient expansion bed mission within the context of contingency bed planning. A conceptual framework for analyzing the effectiveness of the within the wall component of contingency bed planning is presented. Ten CONUS-based Army Medical Treatment Facilities (MTFs) have an inpatient expansion bed mission, which accounts for 2,304 additional beds. Based on the events of 11 September 2001 and contingency operations that followed, Womack Army Medical Center (WAMC) developed a phased mobilization plan that expands the hospital from 155 to 309 operational beds. Based on size, structure, logistic complexity, and environmental uncertainty, the study concludes that inpatient expansion is not an effective component of the overall sourcing strategy. The study provides AMEDD executives with an evidenced-based assessment to consider revising the graduated response to provide inpatient care for the Nation's returning wounded.

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A Policy Analysis: Military Medical Treatment Facility Contingency Inpatient Expansion

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Abstract

The purpose of this study is to conduct a policy analysis of the Army's inpatient expansion bed mission within the context of contingency bed planning. A conceptual framework for analyzing the effectiveness of the within the wall component of contingency bed planning is presented. Ten CONUS-based Army Medical Treatment Facilities (MTFs) have an inpatient expansion bed mission, which accounts for 2,304 additional beds. Based on the events of 11 September 2001 and contingency operations that followed, Womack Army Medical Center (WAMC) developed a phased mobilization plan that expands the hospital from 155 to 309 operational beds. Under the WARTRACE program, 4,260 Reserve Component (RC) soldiers are currently aligned to support bed expansion. Accounting for less than 25% of the required staff, WAMC has one aligned WARTRACE unit consisting of 180 soldiers to support bed expansion. Decentralized personnel contracts account for the remaining additional 400 plus staff requirements. Based on size, structure, logistic complexity, and environmental uncertainty, the study concludes that inpatient expansion is not an effective component of the overall sourcing strategy. The study provides AMEDD executives with an evidenced-based assessment to consider revising the graduated response to provide inpatient care for the Nation's returning wounded. Once the Army's current operational bed capacity is maximized, Veterans Administration and National Disaster Medical System hospitals should be considered prior to executing the within the wall bed expansion.

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Introduction

The purpose of this study is to develop a conceptual framework for analyzing the effectiveness of the Army's inpatient expansion bed mission. The Army Medical Department (AMEDD) has the requirement to provide an expanded bed capacity based on casualty estimates developed for each operational war plan. Based on the 2004 National Defense Strategy and the 2004 National Military Strategy, the Department of Defense (DoD) will continue to focus on three priorities: winning the war on terrorism, enhancing joint warfighting, and transforming for the future (DODNMS, 2004). As the military continues the transformation process, now is the optimal time to review how we plan and prepare to care for the Nation's wounded returning to the United States. Referred to as the graduated response, the AMEDD accomplishes expansion requirements by: expanding within the wall capacities of 10 medical treatment facilities (MTF); shifting patients to Veteran's Administration (VA) facilities through VA health resource sharing; and integrating with civilian facilities through the National Disaster Management System (NDMS). In 1998, the Joint Chiefs of Staff (JCS) developed FUNCPLAN 2508-98, the Integrated CONUS Medical Operations Plan (ICMOP), which details how United States-based medical treatment facilities receive incoming casualties. The background section of this paper will briefly explain contingency bed planning; the ICMOP, the NDMS, and the Army's inpatient expansion strategy in order to understand the complete sourcing strategy for providing inpatient care for the Nation's returning casualties (see Appendix A). The research question for this paper focuses on one aspect of this sourcing strategy. Is the Army's inpatient expansion bed mission an effective component of contingency bed sourcing strategy?

Two very important goals of the Military Health System (MHS) are to enhance financial stewardship and to improve efficiency. Enhancing financial stewardship requires the AMEDD to

accomplish its mission in a cost effective manner that is visible and fully accountable. Improving efficiency requires the AMEDD to "... obtain maximum effectiveness from the resources we are given" (USAMEDCOM, 2004, p.3). Two objectives of the AMEDD's Balanced Scorecard require stakeholders to obtain appropriate healthcare resources based on historic trends and industry forecasts to assist budget development. Today's contingency environment is extremely fluid and intense. The AMEDD's executives must ensure the adequacy of medical resources for returning casualties. This study has practical importance because it addresses both contingency planning requirements and allocation of AMEDD resources. The Army inpatient expansion bed mission is worth studying because AMEDD resources may not be aligned with AMEDD goals in this area, and policy revision is worthy of consideration.

Ten Army MTFs support the inpatient expansion bed mission by resourcing 2,304 additional beds in excess of operational bed requirements (see Appendix B). Under the WARTRACE program, 19 Reserve Component (RC) units comprise a significant portion the total staff for the inpatient expansion beds in the 10 designated Army hospitals (see Appendix C). The RC staff authorizations total 4,260 officers, warrant officers, and enlisted soldiers from 76 different military occupational specialties (MOS) (see Appendix D). While a comprehensive study would include a review of all ten Army MTFs, the scope of this study is limited to Womack Army Medical Center (WAMC) located at Fort Bragg, North Carolina. Womack Army Medical Center has a MEDCOM mission to provide 103 expansion beds; however, WAMC's mobilization plan is four-phased and designed to provide 154 expansion beds. Because the new facility has the capacity to house 431 inpatient beds, planners built in an additional 51 beds over and above the MEDCOM requirement to mitigate against receiving a larger requirement. In

support of its bed expansion mission, WAMC receives one RC WARTRACE unit, the 3274th United States Army Hospital (USAH), which consists of 180 soldiers.

In assessing the effectiveness of the Army's inpatient expansion bed mission, the focus for this study will be on both the human resource and facility components of expanding within the wall capacities. Eugene Bardach's *Eight-Step Path of Policy Analysis* (1996) will serve as the format for analyzing the research question. The eight-steps include: defining the problem (introduction), assembling the evidence (literature review), constructing the alternatives (the graduated response), selecting the criteria (methodology), projecting the outcomes (findings), telling the story (conclusion), confronting the trade-offs (conclusion), and deciding (conclusion). This study will hold all other things constant while assessing the effectiveness of the within the wall bed expansion mission. The reality of executing this mission would include the deployment of medical units in support of contingency operations and the corresponding loss of approximately 300 physicians, nurses, and ancillary personnel under the professional filler system (PROFIS) program. In addition to losing its PROFIS personnel, Womack would also lose a portion of its 1200 plus Government Service Civilians as a result of RC and retiree call-ups (USAMEDCOM 500-5, 1999). The literature review will frame the focus area and reveal the alternative bed sources for caring for the Nation's returning wounded.

Literature Review

Although the author was unable to find a single published study on the effectiveness of the Army's inpatient expansion bed mission, the literature that details the contingency planning process is extensive. In addition, data maintained in various bed and personnel reports are extremely detailed and updated quarterly. The lack of published studies in this area is indicative of the narrow focus of the research question. As such, the applicability of this study is narrowed

to the MHS for future policy analysis. Since the inception of the WARTRACE alignment program in 1994, the Army's CONUS-based inpatient expansion bed mission has never been fully executed in support of contingency operations (AR 11-30, 1995). Thus, the current state of knowledge based on a retrospective review is limited about this topic. The relationships between the three sourcing strategies in broad conceptual terms are addressed in the background and environment sections of this study. Understanding where and how the Army's inpatient expansion bed requirements fit in the overall sourcing strategy permits a more informed analysis of the effectiveness of the Army's MTF contribution.

Background

The 1-4-2-1 Simultaneity Stack.

The national military strategy reflects the complexity of the changing world environment and addresses the planning required to meet varied contingencies. From 1997 to 2001, there has been a force planning paradigm shift of our military from one of threat-based to one of capabilities-based. Under the threat-based paradigm, the services were required to maintain sufficient medical infrastructure to support two nearly simultaneous major theater wars (MTW). Under the capabilities-based paradigm, the services are now required to maintain sufficient medical infrastructure to defend the United States, deter forward in four regions, defeat enemy efforts in two of four critical areas, and win decisively in one of two conflicts (Volpe, 2005). The capabilities-based paradigm is referred to as the 1-4-2-1 Simultaneity Stack. It is worth a note of caution at this point to make the reader aware that much of the doctrine and literature referenced in this study is transforming to keep pace with this paradigm shift.

Medical personnel specialties in the total force, to include the Reserve Component (RC) force, must support anticipated wartime medical diagnostic and treatment requirements. Army

Regulation 500-5, Army Mobilization, (1996) provides policy and guidance for establishing the priority for mobilization of Army RC units, and outlines the responsibilities for maintaining mobilization plans in parallel with current operational plans. In response to ambiguous or unambiguous warnings, the Army has developed a phased mobilization response to deploy the adequate force relative to identified contingencies. The framework of the mobilization response includes three major stages: planning and preparation, crisis management, and national emergency or war. In addition, the mobilization continuum includes: pre-conflict actions, military operations with Active Duty (AD) forces only, presidential-selected reserve call-up with select RC forces not to exceed 200,000 soldiers, partial mobilization with select RC forces not to exceed 1,000,000 soldiers, full mobilization with all of the approved Army force structure, and total mobilization with all national resources available (DCSOPS, 1998).

For each likely regional conflict, the Army has developed operational plans tailored for potential adversaries. Corresponding to each operational plan, medical planners have developed casualty estimates based on the execution of each plan. Casualty estimates coupled with theater evacuation policies are the primary drivers of wartime CONUS-based contingency bed requirements. History has revealed that in every contingency operation, casualties will be evacuated from the areas of operation to CONUS-based medical treatment facilities. For each contingency operation since the Vietnam War, the Department of Defense's (DoD) medical treatment facilities have not been required to expand beyond peacetime operational bed capacities. Regardless of what history reveals, the Army remains capable of doubling its number of operational beds within existing medical treatment facilities to meet potential increased demand (see Appendix B). Based on a scenario where the numbers of casualties begins to overwhelm the Army's numbers of operational beds, medical planners may request authorization

to expand designated medical treatment facilities (see Appendix A). The Secretary of Defense (SECDEF) bases authorization to expand on: a validated need from the theater that is sustaining casualties, the current mobilization phase, the corresponding RC manpower ceiling, the CONUS aeromedical evacuation plan, levels of fill for medical specialties, and current daily patient census reports (MEDCOM 500-5, 1999). Based on mobilization phase RC troop ceilings, potential competing priorities exist between requirements in theater and requirements in CONUS for RC resources. The potential for competing priorities presents environmental uncertainty and degrades the effectiveness of the Army's inpatient bed expansion as a sourcing strategy. The fact that Forces Command (FORSCOM) is the executive agent for mobilization of all RC resources adds to the challenges associated with mobilizing MEDCOM aligned RC forces (DCSOPS, 1998). When taking into account the entire continuum of the fight, FORSCOM places greater emphasis on supporting the theater than supporting CONUS with limited resources. Taking into consideration Tri-service manpower ceilings, the Army may have the need to expand one or more of its facilities to meet increased demand, but the AMEDD may not receive authorization to call-up its RC staff (Deterra, 2004). As a result, the AMEDD may shift casualties requiring inpatient care to VA hospitals or civilian hospitals in accordance with FUNCPLAN 2508-98, the Integrated Medical Operations Plan.

The Environment

Integrated CONUS Medical Operations Plan (ICMOP).

In response to Regional Task 11 of the 1996 Joint Strategic Capabilities Plan, the DoD developed the Integrated CONUS Medical Operations Plan to coordinate the execution of the Services' mobilization plans, the VA/DoD Contingency Hospital System, and the National Disaster Medical System (CINCUSACOM FUNCPLAN 2508-98, 1998). In its current format,

the ICMOP provides a medical mobilization plan to support two nearly simultaneous major theater wars. Since its effective date, four changes have been published to the base document and the responsible command is now Northern Command (NORTHCOM). Although the changes have kept pace with the revisions to DoD and VA operational bed capabilities, the plan is in need of revision to ensure that it adequately supports the changing demands arising from casualty estimates based the 1-4-2-1 Simultaneity Stack force deployment strategy. In order to fulfill current Defense Planning Guidance, the ICMOP is "...used by Services, Supporting Commands, and as necessary by the Department of Veterans Affairs (VA) and Department of Health and Human Services (HHS) for the cooperative governance of the National Disaster Medical System (NDMS) in support of military contingencies" (Kormos, 2002, p.4). The aggressive timeline to commence ICMOP operations for planning purposes consists of five key tasks spanning 20 days. First, MTF Commanders will transfer all non-urgent patients from DoD to VA and network hospitals within 72 hours. Second, the Army will mobilize blood, veterinary, and medical units to support the deployment of forces within six days. Third, the DoD will expand its medical treatment facilities within 20 days. Fourth, the Secretaries for Defense and Health and Human Services will activate the VA and NDMS, respectively within 72 hours. Fifth, the United States Transportation Command will establish a robust aeromedical evacuation system within 12 days. (CINCUSACOM FUNCPLAN 2508-98, 1998). The plan estimates that approximately 29,700 DoD RC medical personnel are required to execute these five key tasks. For continuing operations, the United States Joint Forces Command will project 10 day increments of casualties, manage a pool of CONUS-based beds, regulate and move patients, and receive, treat, and track returning wounded. The ICMOP includes projected inpatient workloads for each DoD MTF for

the first 180 days of hostilities. However, the current projected daily census per ten-day increment exceeds most DoD MTF expanded capability by day 40.

Based on the March 2004 MEDOM quarterly bed report, 106,788 fixed-facility beds support the Integrated CONUS Medical Operations Plan (see Appendix A). The DoD has the capability to expand its 45 medical treatment facilities to 7,762 inpatient beds. The VA has the capability to expand its 65 facilities to 6,975 inpatient beds. The NDMS provides an additional 92,051 inpatient beds that are currently operational in 1,780 non-federal hospitals throughout the United States. Focusing on the research question, the Army's inpatient expansion bed mission accounts for 2% (2,304 of 106,788) fixed-facility beds located in 10 of 22 CONUS-based, Army medical treatment facilities available for contingency bed planning (USAMEDCOM, 2004). Is it prudent use of Army resources to procure and integrate the personnel and equipment to operationalize 2% of the overall beds? A number of staff, equipment, and facility resource constraints challenge the effectiveness of the Army's inpatient bed expansion as a component of the total sourcing strategy.

The Graduated Response

The WARTRACE program.

The goal of the WARTRACE program is to align every Reserve Component unit with an Active Duty unit that has a wartime mission. The wartime mission for the selected 10 Army MTFs is to provide an expanded inpatient capability. WARTRACE organizational alignments are the vehicles through which the 19 RC commanders may enter into cohesive planning with their designated wartime chain of command in the 10 selected Army MTFs. WARTRACE alignments support the deliberate planning process and execution of approved operational plans (AR 11-30, 1995). WARTRACE planning associations cross existing peacetime command lines.

Although these peacetime associations are not supposed to circumvent or violate existing RC command channels on matters of command and control and training management, competing priorities of the dual chain of command complicates this relationship. Tension between the two chains of command may increase environmental uncertainty and degrade organizational effectiveness.

WARTRACE planning alignments provide a rational basis on which RC units establish mission essential task lists (METL) and develop effective unit training programs that support MTF-sponsored collective training exercises. The 19 RC inpatient expansion units range from 100 to 650 personnel. Based on the MTFs inpatient expansion requirements, multiple RC inpatient expansion units may support one MTF (see Appendix C). The composition of each inpatient expansion unit is multi-disciplinary and includes physicians, nurses, and ancillary staff. Modular design permits the incremental increase in inpatient capability based on the graduated mobilization response (Deterra, 2004). Based on the complexities associated with executing a complete MTF expansion in peacetime, training is often problematic. Rather than execute the expansion mission during annual training periods, MTFs integrate the RC staff where needed within operational patient care areas. Individual training and administrative assessments are much more feasible than collective training. The RC WARTRACE units only comprise a portion of the total human resource requirement for each MTF's inpatient bed expansion mission. The total requirement is ultimately determined by MTF-specific deliberate planning and is reflected in the MTF's mobilization plan. The balance of the human resource requirements is procured through contract sources (WAMC Mobilization Plan, 2004).

The Womack Mobilization Plan.

The WAMC mobilization plan was developed based on guidance established in Volume III of the USAMEDCOM Mobilization Planning System, which details the necessary steps to expand the inpatient within the wall capacities and the necessary provisions to regulate and monitor patients evacuated to the VA and NDMS participating hospitals. The plan includes a four-phased incremental approach to expanding bed capacities based on trigger points determined by higher headquarters. The pre-phase, which is the hospital's current posture, consists of 155 operational beds. Phase I calls for the addition of 52 beds for a total of 207 operational beds. Phase II calls for the addition of 21 beds for a total of 228 operational beds. Phase III calls for the addition of 20 beds for a total of 258 operational beds. Based on a February 2005 revalidation, WAMC achieves its agreed upon requirement to support MEDCOM's FY05 contingency bed mission at phase III. However, based on internal mission analysis, phase IV calls for the addition of 51 beds for a total of 309 operational beds (WAMC Mobilization Plan, 2004). Because the installation is a power projection platform and the hospital is a new facility can accommodate 431 beds at maximum inpatient capacity, it is not unreasonable to plan on MEDCOM asking WAMC for additional support.

The major components of the plan include healthcare services, resource management, logistics, facilities, RC forces, and personnel (WAMC Mobilization Plan, 2004). The healthcare services' annex includes bed requirements delineated in each phase of the graduated response, clinical service requirements, patient regulating requirements, and credentialing and privileging of health care providers. The resource management annex discusses mobilization TDA (MOBTDA) development and financial management. The logistics annex is the most comprehensive and includes detailed listings of medical supply requirements, non-expendable

and durable medical equipment requirements, documentation of increased environmental service requirements, and three sources of supply for each item requiring purchase. The facilities' annex includes diagrams that graphically detail the phased-expansion by inpatient ward and the relocation plan for various administrative services that currently occupy clinical space. The RC forces' annex discusses the activation of unit and individual mobilization augmentees, to include the 3274th USAH. The personnel annex discusses the loss of PROFIS personnel, the loss of civilian personnel by RC or retiree call-up, and the requirement to contract for healthcare providers. Although the WAMC mobilization plan does not detail the personnel requirements by specialty or by ward, the 2001 Bed Mobilization Analysis completed by the Directorate of Business Operations serves as the base document for planning purposes (Maloy, 2001).

The Veterans Administration Alternative.

In accordance with public law, the VA/DoD Contingency System, which can be activated by the Secretary of Defense (SECDEF), permits the administrator of the VA to furnish hospital care, nursing home care, and medical services to active duty service members. Based on an execution order from the SECDEF, the VA can provide 3,060 operational beds within 24-hours notification via 65 primary receiving centers (PRC) (CINCUSACOM FUNCPLAN 2508-98, 1998). The Fayetteville, NC VA is not dedicated as a primary receiving center. Within 72-hours, the VA can provide an additional 2,134 operational beds. With at least 10 days advance notice, the VA can expand in a manner similar to the within the wall expansion of DoD MTFs to provide a total of 6,975 operational beds. There are second and third order effects expanding the within the wall capability of the VA hospitals. In several market areas, the VA would be competing with the DoD for limited healthcare personnel and equipment resources (e.g. Augusta, Denver, Nashville, and San Antonio). Throughout the continuum of the graduated response,

United States Transportation Command (USTRANSCOM) regulates patients to a hospital bed closest to the soldier's unit of record via the Global Patient Movement Requirements Center (GPMRC). All patients regulated to VA facilities in support of the ICMOP remain under the command and control of the VA. Total patient visibility is available through TRANSCOM Regulating, Command and Control Evacuation System (TRAC2ES). The VA operational beds clearly represent a viable alternative, once DoD MTFs have reached capacity. Although the VA has the ability to expand within the walls similar to the DoD, the expanded capacity should not be utilized until after the NDMS alternative.

The National Disaster Medical System (NDMS) Alternative.

Activation of the NDMS is the final phase of the graduated response. The NDMS is a cooperative joint venture of the DoD, VA, Federal Emergency Management Agency (FEMA), and the Department of Health and Human Services. The administrative lead agent for this system is the Department of Health and Human Services. The NDMS is a joint federal, state, and local mutual aid organization for a coordinated medical response, patient movement, and definitive inpatient care in time of war, U.S. national emergency, or major U.S. domestic disaster (DODD 6010.22, 2003). Definitive inpatient care is provided by a network of civilian NDMS member hospitals and includes reception, diagnosis and treatment, tracking, monitoring, and financial reimbursement. Federal Coordinating Centers (FCC) are located at selected VA hospitals and DoD MTFs to manage the NDMS program. The FCCs coordinate with the TRICARE Management Activity and follow established reimbursement procedures for associated NDMS medical costs. Currently, reimbursement rates are 110% of CMAC rates. The NDMS may be activated in time of war when the DoD and VA bed capability is insufficient to provide adequate treatment for military casualties. Generally, non-federal hospitals choose to participate in NDMS

to support and promote community involvement in disaster preparedness and to contribute to the CONUS-based effort in supporting our Nation's wounded during contingency operations. Based on existing capacity and daily utilization rates, non-federal hospitals voluntarily commit a designated number of inpatient beds to the NDMS by signing an NDMS Memorandum of Understanding with the nearest FCC. The participating hospitals update NDMS Memorandums of Understanding annually, which causes the bed numbers to fluctuate. The fluctuation in the number of available beds adds to the environmental uncertainty of contingency bed planning (DODD 6010.22, 2003).

The NDMS Operations Support Center is located at the Office of Emergency Response in Rockville, MD. The NDMS currently consists of 92,051 beds ranging from minimal care to critical care (see Appendix B). The DoD manages 24,347 beds through 26 FCCs. Participating with the DoD, 380 non-federal hospitals have signed NDMS Memorandums of Understanding. The VA manages 67,704 beds through 43 Federal Coordination Centers. Participating with the VA, 1,400 non-federal hospitals have signed NDMS Memorandums of Understanding (USAMEDCOM, 2004). Although it is worthy of consideration for WAMC to apply for FCC status in the future, the only FCC in North Carolina is the Salisbury VA. Located northeast of Charlotte, the Salisbury VA is approximately 140 miles from Fayetteville. According to change 3, 15 September 2002, the Salisbury VA currently has agreements with 75 non-federal hospitals, which can provide a minimum of 2,507 operational beds and a maximum of 4,324 operational beds (CINCUSACOM FUNCPLAN 2508-98, 1998). Although each of the 75 non-federal partners of the Salisbury VA serves as viable alternatives for returning wounded to North Carolina, establishing Womack as a DoD Federal Coordinating Center is worthy of consideration as a strategic planning initiative.

With use of the NDMS beds, which are operational during peacetime, as a sourcing strategy, the focus is on coordination and patient regulating. With use of the Army's inpatient expansion beds, which are not operational during peacetime, as a sourcing strategy, the focus is on requesting authorization to mobilize the RC staff, contracting for additional civilian staff, reallocating designated facility space, and executing existing VA contracts for bed and associated equipment. A cursory comparison of the NDMS and Army inpatient expansion bed sourcing strategies reveals the sufficiency and effectiveness of the NDMS alternative. A limiting factor of the NDMS sourcing strategy is that contingency planners have never planned, coordinated, or executed a national medical exercise to test the limits of the system. Also, the agreements formed with non-federal hospitals are not legally binding. Other than negative press, there is nothing in place to prevent hospitals from pulling out of the agreements. Continued scanning of non-federal facility occupancy rates and aggressive maintenance of NDMS agreements may help mitigate unforecasted non-support. In addition, patient tracking and visibility becomes more complex with this alternative.

Methodology

Theoretical Overview

When considering the Army's dependence on RC and contract staff for inpatient bed expansion and on the VA and the NDMS as potential sources for inpatient care, current Army contingency bed planning is largely an open system. According to Coppola (2003), "An open system theory suggests organizations are a smaller part of a larger system and that the environment is a key component of that system because the environment acts on organizations to produce changes" (p. 7). In an open system, the environment is critical in determining organizational survival. The resource dependency theory commonly credited to Pfeffer and

Salancik (1978) is an open system model. Three constructs, approximated units or terms, of the resource dependency theory that are useful in analyzing the effectiveness of the Army inpatient expansion mission include: organizational size, structure, and environmental uncertainty. Several observable variables will be used to approximate these three constructs (Coppola, 2003). Within the context of the research question, dependence is the state in which the AMEDD relies on the actions of the RC and contract staff and various vendors for supplies and equipment to achieve its wartime contingency bed requirements. According to Pfeffer and Salancik (1978), "...if the resources needed by the organization were continually available, then regardless of the source and level of control, there would be no problem" (p. 3). Problems arise because the Army is dependent on its environment for resources and this contingency environment is very fluid.

Optimizing resource dependence by maintaining environmental situational awareness leads to organizational effectiveness. The effectiveness of an organization is its ability to create acceptable outcomes (Pfeffer & Salancik, 1978). Acceptable outcomes are operationally defined as adequate inpatient bed capability to meet contingency-specific demands. In my opinion, the Joint Staff is more concerned with meeting CONUS-based medical demands than it is with the actual sourcing strategy. Considering that casualty estimates historically far exceed actual losses, the Army has achieved acceptable outcomes in every contingency, conflict, or war that history reflects. Organizational effectiveness is an external standard of how well the Army is meeting the contingency bed demands of the returning wounded and of the expectations of the Joint Staff. The Army's effectiveness with contingency bed planning also includes an assessment of the usefulness of what is being done and of the resources that are being consumed by the organization. The conceptual model presented in this section informs effectiveness of within the wall expansion by peering into the utility of its resource consumption.

Conceptual Model

Figure 1, a modified view of the resource dependency theory, depicts the proposition used to assess the effectiveness of the Army inpatient bed expansion sourcing strategy. The four constructs include organizational size, structure, logistic complexity, and environmental uncertainty. Each of the four constructs informs both cost and effectiveness. Cost and effectiveness have a bi-directional impact on one another.

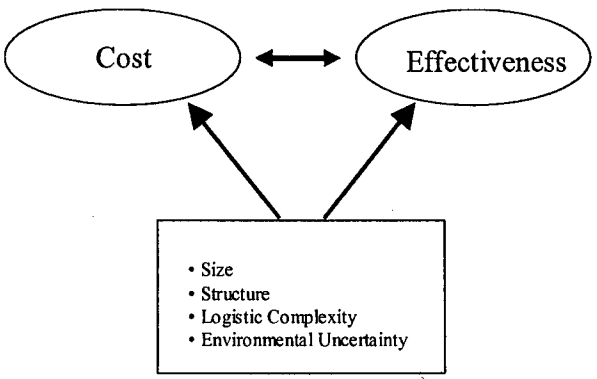


Figure 1. Conceptual model showing relationships between the constructs, cost and effectiveness.

Cost influences effectiveness, which includes the usefulness of what is being done with given resources. Cost is also influenced by size, structure, logistic complexity, and environmental uncertainty. Costs incurred because of the Army's inpatient expansion mission are associated with the RC staff and the selected MTFs. Costs associated with the RC staff during peacetime include: military pay for each assigned soldier, professional pay for each assigned physician, selective reenlistment bonuses for certain enlisted soldiers, and recruiting dollars dedicated to these 19 WARTRACE units. In addition, each WARTRACE unit is budgeted operations and maintenance dollars for daily administration and home station training. The inpatient WARTRACE units are not assigned any equipment. Each expansion MTF procures the

necessary equipment through blanket purchase agreements (BPAs) and provides facility space to the RC staff upon mobilization (MEDCOM 500-5, 1999). While the majority of WARTRACE units are located within proximity of the supported installation, the 3274th USAH has its administrative offices for their full-time unit administrator and select staff located in the basement of WAMC. All costs associated with providing this space within the facility are incurred by WAMC. In addition, there are significant facility costs incurred in preparing expansion rooms to receive patients and make alternative arrangements for administrative staff that may be using inpatient space during peacetime. For example, WAMC's Directorate of Business Operations, which consists of 30 employees, occupies a 25-bed inpatient expansion ward.

The first construct, organizational size, is operationally defined as adequate staffing for the designated expansion mission. Based on the projected workload, MTFs use the Army Staffing Assistance Model (ASAM) to project adequate staffing (Maloy, 2001). The expansion staff includes both the 3274th USAH and contract personnel. With respect to the 3274th USAH, size is evaluated through the measures associated with the variables of unit strength and military occupational specialty (MOS) compatibility. The first measure, unit strength, accounts for the number of personnel on-hand and assigned to each unit (see Appendix C). The unit strength is a percentage calculated by dividing the assigned strength by the authorized strength. An initial data pull for the 19 WARTRACE units revealed unit strengths ranging from 50% to 70%. This study will peer into the specifics for the 3274th USAH, which accounts for less than 25% of the total staff requirements.

To understand the total staffing picture, an assessment of contract personnel is also necessary. The contract personnel component will be measured by the fill ratio of contract

physician, register nurses, licensed practiced nurses, and ancillary medical staff. There are several contracting officer representatives in the facility that manage the hiring of contracting personnel, which currently accounts for approximately 700 of 3,000 or 23% of the staff. In the event of WAMC expansion, the percentage of the total staff could increase to well over 60%. Each personnel contract includes a performance measure that documents the required fill rate, which is generally 95% of positions requested. Also, the personnel contracts include a mobilization and contingency clause that require the contactor to extend work hours or expand the workforce based on the emergency (Cherry, 2004). Contract personnel represent approximately 75% of the total estimated expansion staff.

The second measure, MOS compatibility, accounts for the degree to which the RC staff assigned to each unit aligns with the designated specialties outlined in each unit authorization document (see Appendix D). Each position on the WARTRACE unit authorization document is coded with a specific MOS. Based on skills, knowledge, abilities, recruitment, and initial entry training; each soldier receives a primary MOS and is assigned to a position on the authorization document. The MOS compatibility measure is a percentage calculated by the number of positions with an MOS match divided by the total number of positions. To make this measure more informative, MOS compatibility data will be stratified by officers, warrant officers, and enlisted soldiers. Officers will be further stratified by AMEDD Corps with emphasis placed on the Medical Corps, the Army's physicians. Providing inpatient care requires integrated teams of physicians, nurses, and ancillary staff. Stratifying the MOS compatibility data reveals the status of each major group that comprises the team.

The second construct, structure, is evaluated through the measures associated with the variables of training, integration of RC staff with aligned Army medical treatment facility, and

personnel turnover. Structure is operationally defined as the degree to which the RC staff augments the MTF organic staff for inpatient expansion. The first measure, training, has two components, individual training and collective training. For individual training, each soldier is required to master select knowledge, skills, and abilities and is required to attend designated military training courses. In addition, all physicians and nurses are required to maintain certain board certifications, licensing, and credentialing as part of their individual training. Most RC health care providers meet the licensing and credentialing requirements at their primary place of employment. Each of the 19 WARTRACE units is required to maintain individual records of training for each soldier to include MOS qualifications (USAMEDCOM, 1999). The individual training measure is a percentage calculated by dividing the total number of personnel meeting all training requirements divided by the total number of personnel assigned to the unit. Again, individual training information should be stratified by physician, nurse, and ancillary staff.

The second component of training, collective training, measures the ability of the unit to accomplish its wartime requirements outlined their approved METL. Assessment of collective training includes the level of proficiency obtained for each task during planned weekend drills and during annual training. Each unit commander is required to validate his or her level of proficiency for each mission essential task and is required to report this information to its higher headquarters in accordance unit status report requirements. Each unit commander is also required to provide a copy of his of her METL assessment to the unit's aligned MTF during planned annual training events. The collective training assessment informs the second measure of structure, integration of RC staff with aligned Army medical treatment facility.

The second measure, integration, is assessed by the commander of the aligned MTF, in conjunction with the mobilization staff. Throughout the year, the mobilization staff maintains

communication with the full-time staff of each aligned RC unit. In addition, the mobilization staff assesses the RC staff's performance during planned annual training. Each MTF is required to provide situation reports for each WARTRACE aligned unit to USAMEDCOM, through their respective regional medical command. The level of integration between RC staff and aligned MTFs varies throughout the AMEDD, but this measure is essential to determining organizational effectiveness. Integration is further complicated by the addition of contract civilian personnel hired under contingency contracts to augment the WARTRACE units in meeting staffing requirements.

The third measure, personnel turnover, is assessed quarterly, based on the number of personnel losses and personnel gains. The unit status report details the procedures for calculating personnel turnover. Based on several external factors, including the state of the U.S. economy and operational tempo of RC forces, personnel turnover rates can be excessive when annualized. High personnel turnover rates undermine the structure of WARTRAE units and can potentially degrade organizational effectiveness. High personnel turnover also adds to environmental uncertainty.

The third construct, logistic complexity, is associated with the facility in preparing within the walls space to receive patients. The procurement of equipment, relocation of administrative functions, and preparation of clinical space are extremely complex and costly, and further compound environmental uncertainty as well. There are costs and operational challenges associated with relocating administrative staff from inpatient expansion areas. There are costs associated with procuring beds and ancillary equipment for inpatient expansion beds. In addition to costs, there are operational constraints placed on the expanding facility based on local market availability of required equipment. Based on command emphasis for the mobilization program,

select MTFs have a liberal interpretation of the operational definition of pre-designated expansion space. There is an opportunity cost associated with facility-lock that occurs by placing limitations on facility space. Frequently, the second order impacts to the mobilization plan are not considered in the space utilization decision cycle. Costs associated with the facility include any modifications to pre-designated space to facilitate expansion. The Army has access to VA contracts to obtain the actual beds and support equipment that are only executed during wartime. There are no direct peacetime costs associated with equipment; however, there are indirect costs associated with market surveys and maintaining blanket purchase agreements. The AMEDD MTFs that have an expansion mission conduct market surveys to ensure adequacy of equipment based on geographic location. Although equipment contracts are in place in conjunction with the VA to acquire the beds and associated equipment, market surveys have revealed that it may take a lot longer to procure equipment than the 20-day expansion timeline permits.

The fourth construct, environmental uncertainty, is extremely broad, but may be the most important aspect that informs organizational effectiveness. The inherent nature of war is uncertain. Contingency planning is an exercise in managing uncertainty. The foundation of every operational plan is a set of uncertain assumptions. In order to focus on environmental uncertainty that directly affects the organizational effectiveness of the Army's inpatient expansion mission, this construct is narrowed to elements of the total sourcing strategy. As previously outlined, the environment is operationally defined as all participating hospitals in the DoD, VA, and NDMS that make-up the total inpatient sourcing strategy. Environmental uncertainty is measured through the variables associated with size, structure and logistic complexity, as well as, any variable that influence the Army's ability to accomplish its inpatient expansion requirements. With respect to the construct, size, deficiencies in unit assigned strength or in MOS compatibility

degrade the capability of selected hospitals to expand to meet the demands of the returning wounded. With respect to the construct, structure, deficiencies in individual or collective training or high personnel turnover also degrade the capability of selected hospitals to expand to meet the demands of the returning wounded. The timely procurement of required equipment further adds to the vague nature of contingency bed planning. Specific comments on environmental uncertainty will be embedded in the discussion of size, structure, and logistic complexity.

Data Collection and Data Analysis

A retrospective study of AMEDD bed reports, 3274th USAH unit readiness reports, the WAMC Mobilization Plan, and the 2001 WAMC Bed Mobilization Analysis will serve as the primary means for data collection and data analysis. The research design of this study will include a policy analytic methodology using Eugene Bardach's (1996), "Eight-Step Path of Policy Analysis." The research design is not meant to yield a prediction system on assessing organizational effectiveness. Rather, the research design is intended to quantify the effectiveness of human resource and facility sourcing strategies that are unique to the Army. An effectiveness study of human resource allocation and facility resource requirements within Army inpatient care may serve as a vehicle for future policy revisions to realign resources with stated goals. Descriptive statistics will provide an overview of all data related to the human resources. The Unit Manning Report (UMR), which is updated daily, will provide the unit assigned strength report, which also reflect the primary MOS of each assigned soldier. The Web-based Army Authorization Document System (WEBTAADS) will be used to pull the personnel authorizations for each (USAFMSA, 2004). The WEBTAADS automated system was used to compile WARTRACE unit and MOS summaries (see Appendices C & D). Because no centralized automated system exists to pull the training information, the training-related

information will be requested directly from the 3274th USAH. Environmental uncertainty will be estimated based on the deficiencies observed in size and structure. In addition, inpatient census reports will be queried from available data sources. Although environmental uncertainty is the most difficult construct to collect and analyze data against, it is arguably the most sensitive construct that informs organizational effectiveness. Based on the aforementioned discussion, the following hypothesis will be tested. The AMEDD's within the wall expansion bed plan is not an effective component of the total contingency bed sourcing strategy.

Limitations

Limitations of this study center on data collection and the narrowed study of only one of the Army's ten MTFs. Access to and availability of data for comparison purposes was restricted and difficult to pull. The dual chains of command in peacetime complicate data collection. In addition, turf protecting by subject matter experts and by key RC WARTRACE staff make a complete assessment challenging. Several resource dependence challenges affect organizational effectiveness associated with each facility. Because there is a wide variance in the detail of plans across MTFs, gathering data to measure such resource dependence challenges is extremely cumbersome. Each of the 10 MTFs has a unique inpatient expansion requirement. Blanchfield Army Community Hospital with an expansion mission of 63 beds is not as resource dependent as Walter Reed Army Medical Center with an expansion mission of 444 beds. Furthermore, the variance associated with the level of preparedness, attention to the contingency mobilization mission, and insufficient detail of required mobilization plans makes it difficult to generalize the findings of looking at one MTF.

Transformation across the DoD and the Army is moving at lightening pace. As a second order effect, many of the references used in this study require revision. As an example, the

Integrated CONUS Medical Operations Plan still requires revision as it still references U.S. Atlantic Command instead of Northern Command. Casualty estimates associated with every theater contingency require updating as a result of the changing paradigm in operational planning. Correspondingly, the ICMOP's projected inpatient workload by MTF requires revision. The projected inpatient workload appendix was last published with the base plan in 1998, and the matrix does not account for operational and expansion capacity changes due to new military construction projects (CINCUSACOM FUNCPLAN 2508-98, 1998). The current estimate reflects a daily census for WAMC of 439 inpatients by contingency day 40 based on its old facility. Transitioning to its new facility in 2000, WAMC now has a mobilization plan that expands the facility to 309 beds. As a third order effect, each MTF with an expansion requirement must ensure that its mobilization plan is based on the integrated plan, which details expected workload by CONUS-based hospital, and not based on historic workload unique to the MTF's past occupied bed days.

The majority of the data used to evaluate the construct, logistic complexity, is based on the 2001 *Bed Mobilization Analysis* conducted by the Directorate of Business Operations. In addition, the costs associated with logistic complexity were maintained in 2001 dollars. The methodology for analysis included an incremental increase to inpatient workload by ward recorded for 2001. In actuality, the number and type of returning wounded could potentially be drastically different from workload performed during 2001. Future revisions to the mobilization analysis should be acuity-based as a function of casualty estimates provided by medical planners that details both the number and type. In addition, the methodology included a three-phased expansion that increases the hospital's capacity to 207, 309 and 388 beds, respectively. However, the current plan includes a four-phased concept that increases the hospital's capacity to 207, 228,

258, and 309 beds, respectively. The costs associated to each phase were calculated on a non-cumulative annual basis for an annual period, even though actual implementation of the plan will more realistically accelerate phases for a period less than a year. The most likely course of action is immediate expansion to phase III, 258 beds, which is the current MEDCOM mission. The methodology for accounting for mobilization plan changes is detailed in the results section. Regardless of the numbers and corresponding costs, the historic analysis is extremely informative and relevant to understanding the complexities of expanding within the walls.

Results

For approximately ten years the Army has maintained 4,260 positions in the RC force structure to perform a mission that has since been displaced by a mature emergency preparedness plan that synchronizes the DoD, VA, and civilian community to support contingency operations. Based on initial strength reports and consultation with MEDCOM staff, unit strengths and MOS compatibility measurements yield significant deficiencies. Personnel shortages are a result of Operation Iraqi Freedom diversion and recruitment shortfalls (see Appendices E & F). Although the realized cost of staffing the RC units appears to be minor, the total cost of full expansion to 309 beds exceeds $40 million dollars for WAMC alone (see Appendices G & H). The costs for the additional 103 beds required by MEDCOM equates to $21.4 of the $40 million dollars. The pre-phase requires $8.2 million dollars to staff 22 beds currently available to reach the 155-bed MEDCOM operational requirement. Phase IV includes an additional 51 expansion beds in excess of the MEDCOM mission and requires $11.1 million dollars (see Table H2). Because the AMEDD has never executed the expansion mission, speculation is required in select areas related to training. Analysis of individual training, to include credentialing, revealed adequacy of individual requirements, once soldiers achieved MOS qualification. However, MTF collective

training, based on a very general METL, was undeveloped and inconclusive on integration. The degree of environmental uncertainty associated with human resource and logistic requirements, is significant enough to conclude that the Army inpatient expansion strategy is not effective. The utility of these results has far reaching ramifications for future policy revisions. The study provides AMEDD executives with an evidenced-based assessment to consider moving the within the wall expansion component to the last step in the mobilization bed graduated response following execution of the NDMS.

The actual realized costs associated with the within the wall component of expansion are the salaries of the drilling RC personnel, the Active Guard and Reserve (AGR) unit administrators and the GS Civilian unit administrators. Based on a retrospective look at FY04, the 3274th USAH costs associated with salary totaled approximately $901,861 in 2004 dollars. The salary costs included $484,372 in drill pay for 131 soldiers participating in 4,087 drills (Pay Management Report, 2004). The remaining $417,489 was attributed to annual salaries for six AGR and five GS personnel (see Appendix G). The methodology for calculating the 3274th USAH salary costs can be applied to each of the 19 WARTRACE units that support the expansion bed mission. The estimate takes the average time in service by rank for the 3274th USAH and applies each across the authorized ranks for all 19 units. The estimate also assumes that each soldier participated in 48 drills, which is the minimum for the year to be counted towards retirement, and that each unit has the authorized number of full-time administrators. Salary for drill pay only accumulates when the solder is assigned to the unit, and not when the soldier is mobilized or detached for training. Across a range of 50% to 100% of assigned strength for all 19 WARTRACE units, total salary costs are estimated between $11.7 and $23.3 million dollars, annually. Although the method used to estimate salary costs is very rudimentary,

these realized costs have been accruing since 1994 with the reconfiguration of the WARTRACE program. The total costs will be further informed by the programmed costs associated with contract staffing and facility requirements.

As anticipated, the unit strength of the 3274th USAH was at 54%, based on a UMR dated 13 January 2005 (see Appendix E). Of 180 authorized positions, 98 were assigned and available. A further stratification of the unit into clinical and administrative specialties revealed strengths of 54% and 56%, respectively. Of the 146 physician, physician assistant, nurse, and ancillary medical staff authorized, 79 positions were filled. Of the 34 administrative authorizations, 19 positions were filled. Of the 79 clinical positions filled, 32 full time equivalents, which includes medical surgical nurses, licensed practical nurses and healthcare specialists, can actually staff inpatient beds. The remaining 47 clinical personnel would work in specialty care areas, pharmacy, laboratory, and radiology.

Based on their total authorization medical surgical nurses, licensed practical nurses and healthcare specialists, the 3274th USAH would optimally have 82 full time equivalents dedicated to staff inpatient beds. Using the workload management system for nursing, the 82 full time equivalent inpatient staff can deliver nursing care to between 50 and 83 beds continuously (DA MEPR Program Office, 2005). However, at the current staffing level, the 3274th USAH only has 32 full time equivalents for inpatient staffing. As a result, the 32 full time equivalent inpatient staff can deliver nursing care to between 20 and 31 beds continuously Casualties evacuated to CONUS are usually stabilized at Landstuhl Regional Medical Center and are assumed to have an average acuity level of Category III. Category III acuity level is primarily attributed to patients requiring some assistance with the activities of daily living, wound care, intravenous fluids and medication management. Calculations are based on four 12-hour shifts per week or sixteen 12-

hour shifts per month per person. Thus, 32 full time equivalents can work 512 potential shifts per month. Dividing 512 shifts per month by 30 days equates to 17 FTE staff per day. At 100% of calculated nurse care hours 17 staff can support 20 Category III inpatients per day. At 60% of calculated nurse care hours, which is the minimum staffing level for safe care, such staff can support 31 Category III inpatients per day (DA MEPR Program Office, 2005). As a result, there is a shortfall in staffed expansion beds ranging between 21 and 32 to reach Phase I, 52 additional beds.

In addition to the 98 assigned personnel, the 3274th USAH also maintains administrative accountability of 110 organic soldiers that have been cross-leveled to other units for mobilization, MOS qualification training, medical evaluation processing, or administrative separation (see Table F1). The details of the non-available personnel will be discussed later in this section when reviewing the personnel turnover measure. The bed analysis conducted in 2001 assumes that the 3274th reports at 100% strength, which is clearly not the case. Discussion with unit administrators revealed that the Reserve Command treats the 3274th USAH as if it is a pool of individual replacements to be mobilized to fill individual shortages in other RC units. This practice not only causes unanticipated fluctuations in unit strength, but it also adds to the environmental uncertainty associated with this sourcing strategy.

With respect to MOS compatibility, the significant shortfalls were physician specialists, medical-surgical nurses, and medical maintenance (see Appendix E). Of 31 clinical specialties, 16 were at or in excess of 100%, 4 were at 50%, and 11 were less than 50%. Significant physician shortages included two orthopedic surgeons, one pulmonologist, one urologist, one pathologist, and one neurosurgeon. Critical to the sustained inpatient mission, 20 of 40 medical-surgical nurse positions were unfilled. With an increase in the number of inpatient rooms comes

a corresponding increase in medical maintenance requirements. Unfortunately, neither the warrant officer nor two enlisted medical maintenance positions were filled. Other notable enlisted shortages include the healthcare specialists and the licensed practical nurses. There were 7 of 19 healthcare specialists and 5 of 23 licensed practical nurses assigned, respectively. These numbers fluctuate monthly based on MOS qualification training and 91W transition training. As evidenced by the key clinical specialty shortages, a review of MOS compatibility further detracts from the effectiveness of the inpatient bed expansion sourcing strategy.

Although the 3274th USAH is an important component of the WAMC mobilization plan, its clinical personnel only represent approximately 24% of the total staff required to expand to 309 beds. The remaining 400 plus clinical staff required would have to be contracted from the local market area. The Army Staffing Assistance Model (ASAM) forecasted the additional personnel based on historic workload plus an additional 326 occupied bed days per expansion bed (Maloy 2001). At a cost exceeding $8 million dollars, approximately 58 full time equivalents are required during the pre-phase to backfill known military deployments and to provide additional inpatient nursing staffing to support 155 operational beds (see Table H2). Phase I, 52 expansion beds, requires 111 additional inpatient nursing staff and 75 ancillary support staff at a cost just short of $11 million dollars. Ancillary support includes augmentation to pharmacy, pathology, radiology, respiratory therapy, and nutrition care. Phase II-IV, 102 expansion beds, requires 291 staff for additional military deployments, inpatient nursing staff, and ancillary support staff totaling $29.1 million dollars. As a reminder, the costs reflect annual salaries per full time equivalent and will vary based on the duration of each phase and the duration of the entire contingency operation. The total contract staff required includes 23 specialists, 52 registered nurses, and 184 licensed practical nurses. While the nursing contract

requires the sustaining of a 95% fill rate, a retrospective review of FY03 data revealed an average fill rate for registered nurses and licensed practical nurses of 78% (Watson, 2005). The author also estimates that it would be highly improbable to find 10 additional radiologists in the Fayetteville, NC market area. Based on current fill rates for existing requirements, it is highly unlikely that WAMC would be able to hire the required expansion staff from the local market area, which further amplifies environmental uncertainty and deteriorates the effectiveness of the within the wall sourcing strategy. Based on projections from the U.S. Bureau of Labor Statistics published in the February 2004 Monthly Labor Review, more than one million new and replacement nurses will be needed to meet the increased demands for caring for the aging population and to backfill baby boomers retiring by 2012. For the first time, the U.S. Department of Labor has identified Registered Nursing as the top occupation in terms of job growth through the year 2012 (Department of Labor, 2005). Registered Nurses comprise most of the inpatient staff needed for expansion. For the ten hospitals that require Registered Nurses, they will be competing in local areas where demand is forecasted to outpace supply for the next decade.

Compared to the measures associated with size, the measures associated with training were not as easy to quantify. Individual training is based on duty MOS qualification (DMOSQ). The 98 personnel in assigned are considered DMOSQ. Of the 52 listed as non-available under the temporary training holding status (TTHS), 36 personnel are not trained in their duty MOS (see Table F1). Significant shortages due to MOS qualification include: two medical-surgical nurses, one occupational therapist, one psychiatric nurse, one healthcare administrator, and 18 healthcare specialists. All credentialed providers maintained a file with the WAMC credentialing coordinator. Because they are treated a borrowed military when conducting weekend drills and summer annual training periods, unit-specific orientation was not assessed. The author estimates

that a four-week unit-specific orientation would be required if 3274th medical personnel were to fall in on newly expanded inpatient units. Fluctuations in MOS qualification and unit-specific orientation further add to the environmental uncertainty associated with the inpatient expansion mission.

Because we do not actually expand the hospital during annual training (AT) periods, a realistic assessment of collective training was not feasible. The 3274th USAH is divided up into two or three increments for AT, which makes it extremely difficult the adequately train on collective tasks. The unit does have an approved METL, which consists of three tasks: conduct mobilization and deploy, perform expansion and sustain healthcare services, and protect the force (Yearly Training Brief, 2004). Based on a December 2004 WAMC Readiness Conference, the 3274th USAH self-assessed trained in the task, perform expansion and sustain healthcare services, and practiced in the remaining two tasks. The 3274th USAH has nine supporting collective tasks aligned with the expansion METL task; all of which were assessed as trained. Provide hospitalization support, supervise patient care, provide nursing services, and provide emergency medical services were four of the more inpatient-centric supporting collective tasks. The list of supporting collective tasks falls short of identifying and training on tasks associated with establishing their area of operations. The complexities associated with establishing new inpatient units and expanding existing units within the hospital include reception of beds and ancillary equipment, requisition and stocking of medical supplies, establishing new computer connections, requisitioning hospital linens, and familiarizing all staff on hospital policies and procedures were not included in the METL assessment. Furthermore, the unit has not had an external evaluation.

Short of execution of the mobilization plan, the 3274th USAH is well integrated to Womack. Having their unit headquarters and administrative staff located in the basement of the facility definitely enhances the partnership. The majority of the 19 WARTRACE hospital units do not enjoy this luxury. The Womack Readiness Conference, a semiannual event, conducted on 4 December 2004, further enhances the relationship between Womack and its three aligned RC units. On a Saturday in conjunction with a weekend drill period, the conference opened with a command brief from the hospital commander. Corporate briefings included AMEDD force program initiatives, WARTRACE relationships, UCAPERS reporting, and the bed expansion mission. The author also had the opportunity to brief this study and solicit feedback from attendees, which was extremely helpful for gathering necessary data. Each RC commander provided their yearly training brief, which included a METL assessment, personnel report, and training assessment. The event concluded with agreed upon dates for each RC unit to conduct their 2005 AT periods. The unit schedules its AT in two or three two-week increments and assigns its clinical staff to the wards to fill existing shortages. Future initiatives should include the actual expansion of at least one ward to further develop the 3274th USAH's collective skills and level of integration. While, integration of the 3274th USAH appears to be adequate, a complete assessment of this measure calls for speculation on the incorporation of approximately 400 additional contract full time equivalents forecasted to staff up to 309 beds.

Personnel turnover proved to be a more complex and informative measure than originally anticipated. In addition to factoring in normal losses and gains associated with personnel turbulence, non-availability due to mobilization and temporary training holding status (TTHS) significantly increased personnel turnover. For, FY04, the 3274th USAH sustained 44 losses and 30 gains (Unit Readiness Report, 2005). Because WARTRACE units are under the command

and control of the United States Army Reserve Command (USARC) until activated, assigned personnel are subject to transfer to deploying units that are short medical personnel. Cross leveling of the WARTRACE inpatient unit personnel occurred frequently during Operation Iraqi Freedom. The USARC creates derivative unit identification codes (DUIC) and transfers selected personnel out of parent units making it extremely difficult for MTF mobilization staff to maintain personnel asset visibility. The 3274th USAH had 42 personnel mobilized including 8 medical surgical nurses, 5 licensed practical nurses and 12 healthcare specialists (Unit Mobilization Report, 2005). In addition, soldiers are carried in TTHS status when attending MOS qualifying schools or when undergoing a medical evaluation board. The unit had 52 in TTHS status and 16 pending loss for a total of 110 personnel not available to be counted against the assigned strength, 54% (see Table F1). The contract staff requirements calculated for full expansion assume that the 3274th USAH is at 100% authorized strength, which will more than likely never be the case. In accordance with current OIF Personnel Policy Guidance (2005), "...soldiers ordered to active duty are subject to multiple mobilizations and demobilizations, which may extend beyond 24 calendar months from the date of his or her initial activation, as long as the total, cumulative, mobilized time does not exceed 24–months in support of the same declaration of national emergency..." (p. 9). The guidance did not adequately address the cooling-off period once a soldier reaches 24-months. A second order effect of supporting multiple GWOT contingencies is that many 3274th soldiers may reach their 24-month limit rendering them unavailable for their primary mission. Between February 2003 and January 2005, 25 of 82 soldiers with at least one mobilization day are in excess of 450 mobilization days (see Table F2) (Unit Mobilization Report, 2005). Filling shortages in deploying units are often

untimely and an unforecasted requirement, which adds to environmental uncertainty, degrades effectiveness and negatively affects the construct, size.

From a logistics perspective, the within the wall sourcing strategy is the most complex alternative. The Logistics Readiness Manager started on the first floor and worked up to the sixth floor in developing the phased-expansion plan identifying the best courses of action that minimized disruption of existing patient services and maximized use of available space (see Table H1) (Fletcher, 2004). Phase I-III, which includes no relocation of administrative staff, provide 103 additional beds by expanding existing wards already providing inpatient services. Phase III and IV may require the addition of adult beds to the pediatric ward or the relocation of the Laser Eye Surgery program. The equipment, medical supply, and facility cost through phase III totals $2.3 million dollars (see Table H2). Phase IV involves the opening of a new ward and the relocation of Hospital Education to produce 52 expansion beds. As a result of opening a new ward, renovation and relocation costs are incurred resulting in a total logistics cost for phase IV at $1.3 million dollars. Approximately 55 vendors from 18 States supply medical equipment and consumable supplies. Because Brooke Army Medical Center has a 430-bed expansion mission, it was alarming to discover that a source from San Antonio, TX provides 12 items including defibrillators, suction apparatuses, and infusion pumps (Fletcher, 2004). Because it is illegal to pay vendors to maintain a reserve stock, most suppliers can only provide what they have at the point of requisition. Most vendors reported that is would take two to three months to fill any requests not initially filled and a few noted that select items are made to order (e.g. medication carts, crash carts, and select bed suppliers). The relocation of Hospital Education does not appear to be extremely difficult, but it still would require the procurement and placement of trailers, establishing of utilities and network connectivity, relocation of administrative equipment, and the

preparation of clinical space. The success or failure of the mobilization plan may very well rest on the availability of equipment and the timeliness of delivery. Within the context of logistics, 20 to 30 days is quite an aggressive target to be fully expanded. There are also third order effects associated with purchasing $800,000 worth of medical equipment. Once you make the purchase, you own it and all the recurring maintenance required, even after the contingency. For those that remember the early 1990s, remember the warehouses filled with expansion equipment that was coded and turned into the Defense Reutilization Marketing Office. Translate this purchasing life cycle across 10 CONUS-based MTFs.

Discussion

A retrospective look at casualty rates from World War II through Operation Iraqi Freedom reveals a significant decrease in the number and type of soldiers on the battlefield. Correspondingly, there has been a decrease in the number of wounded and potential inpatients (see Appendix J). During the 3.5 years since the beginning of Operations Enduring and Iraqi Freedom, there has bee approximately 12,000 wounded compared to approximately 672,000 wounded during World War II. Through innovations in armored vehicles, body armor, ballistic goggles, the majority of evacuees are treated on an outpatient basis. As an example, approximately 85% of the 700 wounded received by Landstuhl Regional Medical Center during the fist year of Operation Enduring Freedom were treated on an outpatient basis (Gillespie, Johnson & Frazier, 2002). As a second example, Walter Reed Army Medical Center currently has 45 inpatients as a result of Operations Enduring and Iraqi Freedom. From the beginning of hostilities in 2001 through April 29, 2005, Water Reed has treated and discharged 1,715 inpatient and 2,559 outpatient casualties from March 2004 to April 2004 (WRAMC, 2005). Historically, Walter Reed is a primary receiving center for CONUS because of its robust specialty care.

Although the number of inpatient casualties, 40%, appears to be quite high, Walter Reed did not have to expand its operational capacity to accommodate the workload. Optimal execution of the Integrated CONUS Medical Operations Plan would regulate wounded to locations closest to their unit of record. As the Army continues to transform to meet the requirements of a capabilities-based force, we continue to leverage technology to shape the battlefield to meet the enemy at a time and place of our choosing and at a force ratio that favors the minimization of casualties. The decrease in the number of casualties returning to CONUS from contingency operations, further favors the use of current operational DoD bed capacity and the civilian sector for overflow, as opposed to, expanding within the walls.

In terms of the identified constructs, the Army's contingency inpatient bed expansion mission is not an effective sourcing strategy. The estimated total cost for Womack's mobilization plan exceeds $40 million dollars. The cost for the additional 103 beds required by MEDCOM equates to $21.4 of the $40 million dollars. The pre-phase requires $8.2 million dollars to staff 22 beds currently available to reach the 155-bed MEDCOM operational requirement. Phase IV includes an additional 51 expansion beds in excess of the MEDCOM mission and requires $11.1 million dollars (see Table H2).

Environmental uncertainty across the continuum of contingency planning from casualty estimates to bed requirements for returning casualties mandates a higher order analysis that executives continually update. In addition to the environmental uncertainty inherent in the staffing and facility requirements of inpatient expansion, the actual inpatient census at the time of executing the plan further complicates expanding within the walls. The actual inpatient census of Army MTFs is tightly monitored by USAMEDCOM. From 2000 to 2004, the average length of stay across the ten MTFs with an inpatient expansion mission was 3.7 days. Over the same

period, the cumulative average daily census was 828 inpatients for the ten facilities, which leaves an available operational capacity of 644 beds (see Appendix I) (Brocker, 2005). The fist step in executing the mobilization plan requires MTF commanders to transfer all non-urgent patients to VA or civilian hospitals. Averaging the inpatients over four years, the WAMC commander could potentially have 70 patients to transfer to local hospitals. Based on historical trends, commanders are able to assess the portion of their operational capability that is already committed. Unforecasted fluctuations in inpatient occupancies add to the uncertainty in projecting the number of non-urgent patents requiring transfer and in projecting the capability available for the returning wounded. As a result, excessive inpatient occupancy can potentially degrade the Army's responsiveness to wartime requirements, should a large number of inpatients require diversion to local hospitals.

An initial assessment of operational estimates and the entire contingency bed sourcing strategy leads one to conclude that occupying available Army operational beds, shifting patients to VA facilities, and integrating available civilian facility inpatient capacity through the NDMS program is adequate absent of expanding within the wall capacities of 10 Army MTFs. In accordance with the AMEDD's Balanced Scorecard, stakeholders must continue to analyze the effectiveness of a multitude of areas within the Military Health System. Two very important goals of the Military Health System (MHS) are to enhance financial stewardship and to improve efficiency. Improving efficiency requires maximum effectiveness from existing resources. Stakeholders are encouraged to quantify and qualify where sharing agreements exist and identify healthcare resource requirements based on historic trends and industry forecasts. The utility of this study informs these two very important goals.

According to Pfeffer and Salancik (1978), the environment is critical to determining the organization's survival. Survival equates to having adequate means to care for returning wounded. In this case we can depend on the environment to provide a significant number of medical staff and medical equipment from market areas that may already be stretched to capacity. Alternatively, we can depend on the environment for available operational beds by regulating patients to VA and NDMS hospitals, once the DoD MTFs reach operational capacity. There are several trade-offs associated with VA and NDMS options. First, each requires SECDEF approval to activate. With close coordination between NORTHCOM and the Joint Staff, responsiveness by the SECDEF should not be a problem. Second, the DoD will have to become more involved in standing up additional FCCs, conducting occupancy rate assessments of non-federal hospitals, and vigilantly monitoring local agreements. Currently, the DoD only manages one-third of all NDMS beds. This percentage of the total should definitely increase. Centralized monitoring of NDMS coordinated beds through the Command Management System and Balanced Scorecard will place command emphasis on the program and enhance its viability. Third, the DoD will have to continually monitor reimbursement rates across the United States and ensure that the NDMS rate, 110% of CMAC, remains competitive. The non-federal hospitals conduct market analysis and only agree to provide extra operational capacity that is affordable. The NDMS reimbursement rate should remain viable in the near term. Fourth, patient regulating and tracking is more complicated when returning wounded are dispersed throughout communities to non-federal hospitals. On a smaller scale, Patient Administration Divisions maintain visibility of service members transferred to network and non-network providers on an inpatient basis. In comparison, the complexities of expanding within the wall capacities outweigh the trade-offs associated with the VA and NDMS alternatives.

Conversely, there are some pros to expanding within the walls of existing Army MTFs. The space is already allocated and regardless of what models predict, staff and nurse care hours can be adjusted to handle increased inpatient workload. Patient regulating and accountability tasks are much less complicated. The public relations activities are much less complicated by caring for the Nation's wounded on Army installations, as opposed to, civilian hospitals. However, the author believes that the cons far outweigh the pros with respect to the complexities associated with expansion. The local market area would have extreme difficulty providing the required staff. Procuring and installing the necessary equipment from vendors throughout the United States within 20 days is extremely aggressive and optimistic. Depending on RC WARTRACE units that are being piecemealed to support individual requirements assumes a high degree of risk.

Conclusion

In assembling the evidence, the policies that govern execution for the graduated response to receive the Nation's wounded were explored. In selecting the criteria and projecting the outcomes, a theoretical model for assessing the effectiveness of within the wall expansion was proposed. In addition, an in-depth analysis of Womack's mobilization plan was conducted and results quantified. The author concludes that the Army inpatient expansion bed mission is not an effective sourcing strategy. Ten CONUS-based Army Medical Treatment Facilities (MTFs) have an inpatient expansion bed mission, which accounts for 2,304 additional beds, which accounts for 2% of the total sourcing strategy. The estimated total cost for Womack's mobilization plan exceeds $40 million dollars. The cost for the additional 103 beds required by MEDCOM equates to $21.4 of the $40 million dollars. Based on size, structure, logistic complexity, and environmental uncertainty, the study concludes that inpatient expansion is not an effective

component of the overall sourcing strategy. The study provides AMEDD executives with an evidenced-based assessment to consider revising the graduated response to provide inpatient care for the Nation's returning wounded. The concepts discussed in this study should be applied to each MTF with an expansion mission in order to validate its findings. Once the assessment is complete and if the results are similar, the AMEDD should petition NORTHCOM and the Joint Staff to modify the graduated response outlined in the Integrated CONUS Medical Operations Plan and corresponding mobilization plans. In the execution of the graduated response, activation of the VA and NDMS participating hospitals should be considered ahead of expanding within the wall bed capacities.

References

Bardach, E. (1996). *The Eight-step path of policy analysis*. Berkeley Academic Press: Berkeley, CA.

Brocker, D. Directorate of Business Operations, Womack Army Medical Center, Fort Bragg, NC. M2 Data Pull. 29 March 2005.

Cherry, L. Contracting Office, Womack Army Medical Center, Fort Bragg, NC. *Department of Nursing: Performance of Work Statement*. 20 January 2004.

Commander, 3274th United States Army Hospital (USAH): Unit Commander's Pay Management Report, Fort Bragg, NC, September 22, 2004.

Commander, 3274th USAH: Unit Manning Report (UMR), Fort Bragg, NC, January 13, 2005.

Commander, 3274th USAH: Unit Mobilization Report, Fort Bragg, NC, January 15, 2005.

Commander, 3274th USAH: Unit Readiness Report, Fort Bragg, NC, January 10, 2005.

Commander, 3274th USAH: Yearly Training Brief, Fort Bragg, NC, December 4, 2004.

Commander in Chief, U.S. Atlantic Command: Functional Plan 2508-98: Integrated CONUS Medical Operations Plan (CINCUSACOM FUNCPLAN 2508-98), Norfolk, VA, July 15, 1998.

Coppola, M.N. *An overview of various organizational theories*. Talking Points, Army-Baylor Macro Organization Behavior Course, October 2003.

Department of Defense: National Disaster Management System (NDMS): Defense Directive (DODD) 6010.22. Washington, DC, 2003.

Department of Defense: The Directorate of Information Operations and Reports, Statistical Information and Analysis Division. "Military Casualty Information." Retrieved on 28 April 2005 from http://www.dior.whs.mil/mmid/casualty/castop.htm

Department of Defense: The National Military Strategy (DODNMS) of the United States: A Strategy for Today; A Vision for Tomorrow. Washington, DC, 2004.

Department of Labor: Bureau of Labor and Statistics. "Bureau of Labor and Statistics 2002-2012 Employment Projections." Retrieved on 29 April 2005 from http://www.bls.gov/news.release/pdf/ecopro.pdf

Department of the Army (DA): Medical Expense and Performance Reporting System (MEPR) Program Office. "Workload Management System for Nursing-Army (WMSN-A)." Retrieved on 27 April 2005 from http://www.ampo.amedd.army.mil/wmsna/index.html

Deterra, G.A., Lieutenant Colonel, U.S. Army, MEDCOM Operations, Reserve Component Planning, Fort Sam Houston, TX. *Lecture on Reserve Component Support to MEDCOM.* 7 May 2004.

Fletcher, B. Logistics Readiness Manager, WAMC, Fort Bragg, NC, Discussions on Mobilization Plan, September 2004 through February 2005.

Gillespie, D. L., Johnson, D. A., & Frazier, J. B. (2002). Tracing the Development of a Deployed Warrior Medical Management Center (DWMMC). *AMEDD Journal,* PB 8-02-10/11/12 Oct/Nov/Dec.

Kormos, W.J., Lieutenant Colonel, U.S. Army, Medical Liaison Officer to United States Transportation Command, United States Joint Forces Command, Norfolk, VA. *Lecture on the Integrated CONUS Medical Operations Plan (ICMOP).* 16 April 2002.

Maloy, M.L., Senior Analyst to Directorate of Business Operations, WAMC, Bed Mobilization Analysis (Unpublished Study), Fort Bragg, NC, December 2001.

Office of the Deputy Chief of Staff for Operations and Plans (DCSOPS), Department of the Army. "Army Mobilization and Operation Planning and Execution System AMOPES)."

(19 June 1998): Washington, DC.

Office of the Deputy Chief of Staff for Personnel (DCSPER), Department of the Army. "Personnel Policy Guidance (PPG)." Retrieved on February 10, 2005 from http://www.odcsper.army.mil/militarypersonnel/PPG/Personnel%20Policy%20Guidance%20Chapter%201.doc

Pfeffer, J. & Salancik, G.R. (1978). *The external control of organizations: A resource dependence perspective* (pp. 1-20). Kent, OH: Kent State University Press.

U.S. Army Force Management Support Agency (USAFMSA): *Web-based Army Authorization Document System (WEBTAADS)Reports*. Retrieved on April 21, 2004, from https://webtaads.belvoir.army.mil/usafmsa

U.S. Army: Army Mobilization: Army Regulation (AR) 500-5. Washington, DC, Headquarters, Department of the Army, 1996.

U.S. Army: WARTRACE Program: Army Regulation (AR) 11-30. Washington, DC, Headquarters, Department of the Army, 1995.

U.S. Army Medical Command (USAMEDCOM): Emergency Employment of Army and Other Resources: The U.S. Army Medical Command Mobilization Planning System: MEDCOM Regulation 500-5. Fort Sam Houston, TX, Headquarters, United States Army Medical Command, 1999.

USAMEDCOM. (2004). *March 2004 National Disaster Management System Bed Report*. Fort Sam Houston, TX: Lieutenant Colonel Deborah K. Knickererbocker.

USAMEDCOM. (2004). *The AMEDD Balanced Scorecard.* Retrieved April 9, 2004, from https://ke.army.mil

Volpe, Philip, MD, Colonel, Assistant Surgeon General for Force Projection, Office of the Surgeon General, Alexandria, VA. "Lecture on Army and AMEDD Transformation and Modularity." January 21, 2005.

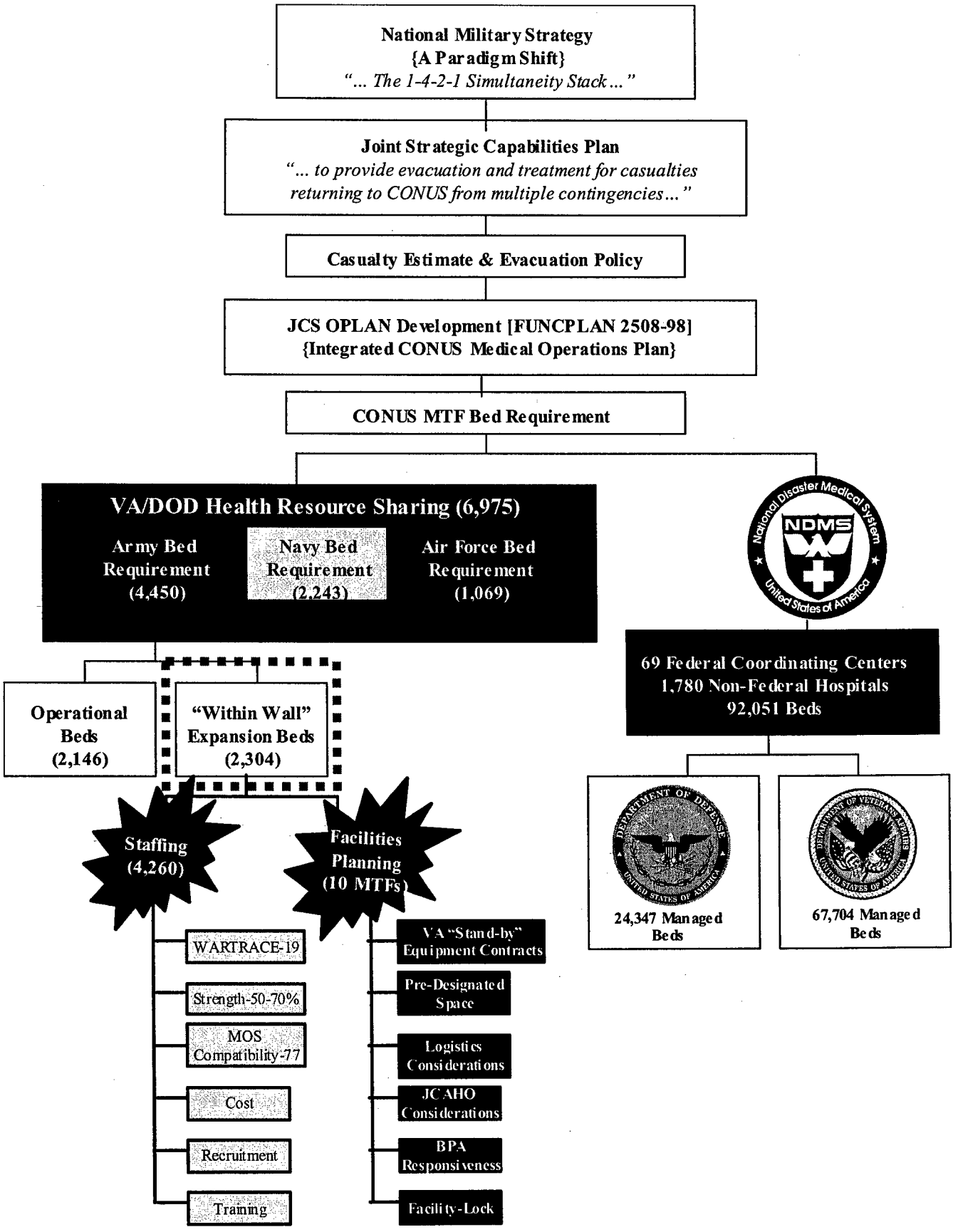
Walter Reed Army Medical Center (WRAMC). "WRAMC Global War on Terrorism (GWOT) Patient Report." Retrieved on 29 April 2005 from https://gwot.wramc.amedd.army.mil

Watson, G. Contracting Officer Representative, Department of Nursing, WAMC, 2003 Nursing Fill Rates (Unpublished Study), Fort Bragg, NC, 2005.

Womack Army Medical Center (WAMC). WAMC Mobilization Plan. Fort Bragg, NC, October 2004.

Appendix A

Contingency Bed Planning Overview



Appendix B

Army Contingency Bed Summary

Regional Medical Command / Medical Treatment Facility	Current Operational Beds				Current Expansion Beds				Total Beds
	Intensive Care	Intermediate Care	Minimal Care	Total	Intensive Care	Intermediate Care	Minimal Care	Total	
Great Plains RMC	**87**	**576**	**98**	**761**	**29**	**726**	**90**	**845**	**1606**
Fort Bliss, TX (WBAMC)	16	132	0	148	0	236	0	236	384
Fort Carson, CO (Evans)	7	43	28	78	0	0	0	0	78
Fort Hood, TX (Darnall)	8	67	12	87	0	90	90	180	267
Fort Leonardwood, MO (Wood)	3	20	20	43	0	0	0	0	43
Fort Polk, LA (Bayne-Jones)	6	38	22	66	0	0	0	0	66
Fort Riley, KS (Irwin)	4	24	16	44	0	0	0	0	44
Fort Sam Houston, TX (BAMC)	35	174	0	209	29	400	0	429	638
Fort Sill, OK (Reynolds)	8	78	0	86	0	0	0	0	86
North Atlantic RMC	**59**	**425**	**121**	**605**	**0**	**547**	**0**	**547**	**1152**
Fort Belvoir, VA (DeWitt)	7	39	0	46	0	0	0	0	46
Fort Bragg, NC (Womack)	15	140	0	155	0	103	0	103	258
Fort Eustis, VA (McDonald)	0	11	19	30	0	0	0	0	30
Fort Knox, KY (Ireland)	2	46	29	77	0	0	0	0	77
Washington, D.C. (WRAMC)	33	150	73	256	0	444	0	444	700
West Point, NY (Keller)	2	39	0	41	0	0	0	0	41
Southeast RMC	**45**	**432**	**100**	**577**	**0**	**594**	**0**	**594**	**1171**
Fort Benning, GA (Martin)	7	39	28	74	0	77	0	77	151
Fort Campbell, KY (Blanchfield)	8	114	0	122	0	63	0	63	185
Fort Gordon, GA (EAMC)	20	172	0	192	0	364	0	364	556
Fort Jackson, SC (Moncrief)	4	20	36	60	0	0	0	0	60
Fort Rucker, AL (Lyster)	0	4	36	40	0	0	0	0	40
Fort Stewart, GA (Winn)	6	83	0	89	0	90	0	90	179
Western RMC	**18**	**122**	**63**	**203**	**2**	**316**	**0**	**318**	**521**
Fort Irwin, CA (Weed)	0	0	20	20	0	0	0	0	20
Fort Lewis, WA (MAMC)	18	122	0	140	2	316	0	318	458
Fort Wainwright, AK (Bassett)	0	0	43	43	0	0	0	0	43
CONUS Total:	**209**	**1555**	**382**	**2146**	**31**	**2183**	**90**	**2304**	**4450**

Appendix C

Inpatient Expansion WARTRACE Units

Regional Medical Command / Unit Name	Home City	Medical Treatment Facility (MTF)	MTF Location	Personnel Authorizations			
				Officers	Warrant Officers	Enlisted	Total
Great Plains Regional Medical Command							
4005th USAH	Lubbock, TX	BAMC	San Antonio, TX	139	1	254	394
4226th USAH	Fargo, ND	BAMC	San Antonio, TX	35	0	84	119
5501st USAH	San Antonio, TX	BAMC	San Antonio, TX	218	0	430	648
4207th USAH	Greentop, MO	Darnall	Fort Hood, TX	46	0	110	156
4223rd USAH	Omaha, NE	Darnall	Fort Hood, TX	102	0	164	266
4211th USAH	San Diego,CA	WBAMC	Fort Bliss, TX	62	1	140	203
6253th USAH	Santa Rosa, CA	WBAMC	Fort Bliss, TX	77	0	162	239
North Atlantic Regional Medical Command							
3274th USAH	Durham, NC	Womack	Fort Bragg, NC	76	1	103	180
4215th USAH	Richmond, VA	WRAMC	Washington, D.C.	50	0	135	185
4219th USAH	Picatinny, NJ	WRAMC	Washington, D.C.	75	1	198	274
Southeast Regional Medical Command							
4203rd USAH	Nashville, TN	Blanchfield	Fort Campbell, KY	40	0	73	113
4206th USAH	Chatanooga, TN	EAMC	Fort Gordon, GA	60	1	132	193
4208th USAH	Lexington, KY	EAMC	Fort Gordon, GA	39	1	75	115
4209th USAH	Lexington, KY	EAMC	Fort Gordon, GA	32	0	74	106
5010th USAH	Louisville, KY	EAMC	Fort Gordon, GA	78	1	147	226
4010th USAH	New Orleans, LA	Martin	Fort Benning, GA	52	1	84	137
4212th USAH	Kingsport, TN	Stewart	Fort Stewart, GA	64	0	95	159
Western Regional Medical Command							
4224th USAH	Des Moines, IA	MAMC	Fort Lewis, WA	111	0	217	328
6252nd USAH	Ventura, CA	MAMC	Fort Lewis, WA	70	1	148	219
TOTAL:				**1426**	**9**	**2825**	**4260**

Appendix D

WARTRACE Unit Military Occupational Specialty (MOS) Summary

MOS	Primary Specialty	Count
Officer Specialties that receive Professional Pay Incentives		
Dental Corps		
63N	Oral Maxillofacial Surgeon	2
63B	Comprehensive Dentist	1
Medical Corps		
61M	Orthopedic Surgery	53
61J	General Surgery	36
61R	Diagnostic Radiology	23
60N	Anesthesiology	21
05A	Commander, Army Medical Department	19
61L	Plastic Surgery	19
61U	Pathology	16
61Z	Neurosurgeon	12
60W	Psyciatrist	10
60T	Otolaryngology	9
61F	Internal Medicine	7
61K	Thoracic Surgery	6
60K	Urology	4
60S	Opthomology	4
61H	Family Practice	4
62A	Emergency Medicine	4
61W	Peripheral Vascular Surgery	3
60B	Nuclear Medicine	2
60F	Pulmonary Disease	2
60G	Gastroenterology	2
61Q	Therapeutic Radiology	2
62B	General/Field Medicine	2
60J	OB/GYN	1
Medical Service Corps		
73B	Clinical Psychologist	6
67F	Optometrist	1
Nurse Corps		
66F	Nurse Anesthesia	53
Veterinary Corps		
64B	Veterinary Services Officer	6
64A	Veterinary Services Officer	5
30	Subtotal Officers Receiving Professional Pay	335

Appendix D (Continued)

WARTRACE Unit Military Occupational Specialty (MOS) Summary

MOS	Primary Specialty	Count
Officer Specialties that do not receive Professional Pay Incentives		
Chaplains Corps		
56A	Chaplain	22
Medical Service Corps		
70E	Patient Administration Officer	30
67E	Pharmacy Serveice Officer	25
70K	Health Services Material	22
70F	Health Services Human Resources	17
70H	Health Services Plans, Operations, Intelligence, Security, and Training	15
73A	Social Worker	15
67A	Health Services Officer	13
70B	Health Services Administrative Assistant	13
67G	Podiatry	9
70A	Heath Care Administration	5
71A	Microbiology, Parasitology, Immunology	3
71B	Biochemistry	2
Nurse Corps		
66H	Medical Surgical Nurse	688
66E	Operating Room Nurse	72
66C	Psychiatry	30
66N	Nurse Administration	18
Specialist Corps		
65B	Physical Therapy	31
65A	Occupational Therapy	26
65C	Dietician	21
65D	Physician Assistant	14
21	Subtotal Officers Not Receiving Professional Pay	1091
Warrant Officer Specialties that do not receive Professional Pay Incentives		
670	Health Service Maintenance Technicians	8
420	Military Personnel Technician	1
2	Subtotal Warrant Officers Not Receiving Professional Pay	9

Appendix D (Continued)

WARTRACE Unit Military Occupational Specialty (MOS) Summary

MOS	Primary Specialty	Count
Enlisted Specialties that historically receive Selective Reenlistment Bonus (SRB)		
91WM6	Licensed Practice Nurse	467
91K	Lab	227
91J	Medical Supply (76J)	165
91D	Operating Room Specialist	152
91R	Vet Food Inspector	111
91P	Radiology	106
91Q	Pharmacy Technician	84
91V	Respiratory Specialist	50
91A	Medical Equipment Repairmen	36
91T	Veterinary Services NCO, Animal Care	24
10	Subtotal Enlisted Soldiers Receiving SRB	1422
Enlisted Specialties that historically do not receive Selective Reenlistment Bonus (SRB)		
91W	Healthcare Specialist	694
91M	Food Service	275
91G	Patient Admin (71G)	220
42A	Personnel Services and Administration	67
91X	Mental Heath Specialists	40
42L	Personnel Services and Administration	28
92Y	Unit supply Specialist	24
56M	Chaplains Assistant	22
44C	Finance Specialaist	17
00Z	Command Sergeant Major	10
73C	Personnel Services and Administration, Military Pay	3
91H	Optical Lab Specialist	2
91E	Dental Specialist	1
13	Subtotal Enlisted Soldiers Not Receiving SRB	1403
	Aggregate Subtotals	
51	Officers	1426
2	Warrant Officers	9
23	Enlisted Soldiers	2825
76	Grand Total	4260

Appendix E

3274th USAH MOS Compatibility Summary

MOS	Primary Specialty	Authorized	Assigned	Fill Rate (%)
Clinical Specialties				
Medical Corps Officers				
60N	Anesthesiology	1	3	300
61F	Internal Medicine	1	2	200
60W	Psyciatrist	1	1	100
61J	General Surgery	1	1	100
61L	Plastic Surgery	1	1	100
61R	Diagnostic Radiology	1	1	100
61M	Orthopedic Surgery	3	1	33
60F	Pulmonary Disease	1	0	0
60K	Urology	1	0	0
61U	Pathology	1	0	0
61Z	Neurosurgeon	1	0	0
Nurse Corps Officers				
66C	Psychiatry	1	2	200
66F	Nurse Anesthesia	2	2	100
66E	Operating Room	2	1	50
66H	Medical Surgical Nurse	40	20	50
66N	Nurse Administration	1	0	0
Specialist Corps Officers				
65B	Physical Therapy	2	2	100
65C	Dietician	1	1	100
65A	Occupational Therapy	2	1	50
Medical Service Corps Officers				
67E	Pharmacy	2	2	100
67G	Podiatry	1	1	100
71E	Clinical Lab	1	0	0
Enlisted Specialties				
91V	Respiratory Specialist	1	2	200
91P	Radiology	4	5	125
91D	Operating Room Specialist	4	4	100
91Q	Pharmacy Technician	4	4	100
91X	Mental Heath Specialists	2	1	50
91M	Food Service	15	7	47
91W	Healthcare Specialist	19	7	37
91K	Lab Technician	6	2	33
91WM6	Licensed Practical Nurse	23	5	22
31	Subtotal Clinical Specialties	146	79	54

Appendix E (Continued)

3274th USAH MOS Compatibility Summary

Administrative Specialties				
Officers				
05A	Commander	1	1	100
56A	Chaplain	1	0	0
70E	Patient Administration Officer	1	2	200
70B	Health Services Administrator	1	1	100
70K	Health Services Material	1	1	100
70A	Heath Care Administration	1	0	0
70F	Health Services Human Resources	1	0	0
70H	Health Services Plans, Operations, Intelligence, Security, and Training	1	0	0
Warrant Officers				
670	Health Service Maintenance Technicians	1	0	0
Enlisted				
00Z	Command Sergeant Major	0	1	N/A
91A	Medical Equipment Repairmen	2	0	0
91J	Medical Supply	8	4	50
91G	Patient Admin	9	2	22
56M	Chaplains Assistant	1	2	200
42A	Personnel Services NCO	3	3	100
44C	Personnel Services	1	1	100
92Y	Unit Supply Specialist	1	1	100
17	Subtotal Administrative Specialties	34	19	56
	Aggregate Subtotals			
30	Officers	76	47	62
1	Warrant Officers	1	0	0
17	Enlisted	103	51	50
48	Grand Total	180	98	54

Appendix F

Personnel Turbulence

Table F1

3274th USAH Non-Availability Summary

MOS	Primary Specialty	Mobilized (DUIC)	TTHS	Pending Loss	Grand Total
Medical-Clinical Specialties					
61M	Orthopedic Surgeon		1		1
66C	Psychiatry		1		1
66F	Nurse Anesthesia	1	1		2
66H	Medical Surgical Nurse	8	6	4	18
65A	Occupational Therapy		1		1
65B	Physical Therapy	1			1
65D	Physician Assistant	1			1
72D	Environmental Science			1	1
91WM6	Licensed Practical Nurse	5	2	1	8
91W	Healthcare Specialist	12	3	4	19
91D	Operating Room Specialist		3		3
91G	Patient Administration	4	4		8
91K	Lab Technician	3	1		4
91M	Food Service		6		6
91P	Radiology			1	1
91Q	Pharmacy Technician		1		1
91X	Mental Health Specialists	3			3
17	Subtotal Medical-Clinical Specialties	38	30	11	79
Medical-Administrative Specialties					
70B	Health Services Administrator			3	3
70A	Heathcare Administration		1		1
91J	Medical Supply	1	5	1	7
91A	Medical Equipment Repair	2			2
56M	Chaplains Assistant		1		1
5	Subtotal Medical-Administrative Specialties	3	7	4	14

Appendix F (Continued)

Table F1 (Continued)

3274th USAH Non-Availability Summary

MOS	Primary Specialty	Mobilized (DUIC)	TTHS	Pending Loss	Grand Total
Non-Medical Specialties (Pending Reclassification Training)					
74C	Chemical Munitions Management		1		1
31B	Military Police		2		2
21L	Corps Of Engineers		2		2
11B	Infantry		2		2
13B	Field Artillery		3		3
37F	Psychological Operations Specialist		1		1
63B	Wheeled Mechanic		1		1
73C	Finance Specialist		1		1
75B	Personnel Services	1			1
92A	Automated Logistics Specialist		1		1
92G	Food Service Specialist		1		1
92Y	Unit Supply Specialist			1	1
12	Subtotal Non-Medical Specialties	1	15	1	17
34	Grand Total	42	52	16	110

Table F2

Unit Mobilization Summary

	Number of Personnel		
Mobilization Days	Current Mobilizations	Historic Mobilizations	Total
1-150	28	7	35
151-300	5	4	9
301-450	6	7	13
451-600		22	22
601-750	3		3
Total	42	40	82
Total Mobilization Days (FEB 03 - JAN 05) 22,492			

Appendix G

3274th USAH FY04 Salary Summary

Category		Salary
Weekend and AT Drills		
Drill Pay	131 soldiers for 4,087 drills	$484,372
Active Guard & Reserve (AGR) Unit Administrators		
MSG (Over 22)	Senior HealthCare NCO	$44,586
SFC (Over 22)	Health Care NCO	$41,976
SFC (Over 12)	Personnel Sergeant	$35,762
SSG (Over 18)	Supply Sergeant	$33,718
SSG (Over 18)	Health Care NCO	$33,718
SGT (Over 6)	Personnel Sergeant	$25,567
6	Subtotal AGR Personnel	$215,327
GS Civilian Unit Administrators		
GS-11	Senior Unit Administrator	$51,491
GS-9	Logistics Administrator	$42,558
GS-8	Personnel Administrator	$38,531
GS-7	Unit Administrative Assistant	$34,791
GS-7	Unit Administrative Assistant	$34,791
5	Subtotal GS Civilian Personnel	$202,162
142	Grand Total	$901,861

Appendix H

2001 Bed Mobilization Analysis

Table H1

Womack Army Medical Center Phased-Bed Expansion

		Pre-Phase		Phase I	Phase II	Phase III	Phase IV
		Present		4S, 2N, 2S, & ICU Expand	2S Expands	2S & 3N Expand	4N Opens
		Currently Staffed	MEDCOM Peacetime Mission			MEDCOM Contingency Mission	
Ward/Unit	Current Service	Number of Operational Beds					
6N	Behavioral Health (Out-patient)	0	0	0	0	0	0
6S	Behavioral Health (In-patient)	7	13	13	13	13	13
5N	Business Operations	0	0	0	0	0	0
5S	EFMP	0	0	0	0	0	0
4N	Hospital Education	0	0	0	0	0	52
4S	Medical Ward (In-patient)	31	31	47	47	47	47
3N	Pediatrics (In-patient)	10	18	18	18	26[b]	26[b]
3S	OB (In-patient)	24	31	31	31	31	31
ECN	Neonate	16	12	12	12	12	12
L&D	Labor & Delivery	8	11	11	11	11	11
2N	Surgical Ward (In-patient)	29	29	52	52	52	52
2S	Laser Eye Surgery (Out-patient)	0	0	8	29	48[c]	48[c]
ICU	ICU	8	10	15	15	15	15
CCU Area	Medical-Surgical (In-patient)	0	0	0	0	0	0
Net Expansion Bed Increase				52	21	30	51
Total Beds		133[a]	155	207	228	258	309

Note. Bed expansion plan by phase, by ward and by existing service beginning with beds currently staffed and ending with phase IV.

[a]WAMC currently has 155 equipped beds, but only 133 beds are staffed. [b]Phase III and IV may require the addition of adult beds to the pediatric ward. [c]Phase III and IV may require the relocation of Laser Eye Surgery to accomodate additional beds.

Appendix H (Continued)

2001 Bed Mobilization Analysis

Table H2

Womack Army Medical Center Phased-Bed Expansion Cost Data

Category	Pre-Phase[a]	Phase I	Phase II	Phase III	Phase IV	Total
Staff Contract Costs			($ Dollars)			
Contracts for Deployed Staff[b]	5,233,684					5,233,684
Projected Replacements for Deploying Staff[b]					2,746,312	2,746,312
Projected Nursing Staff for Ward Expansion	2,851,752	7,673,926	1,555,873	2,180,730	3,717,875	17,980,156
Projected Ancillary Staff for Ward Expansion		4,246,909	1,360,558	2,264,071	3,288,731	11,160,269
Equipment Contract Costs						
Beds		73,620	42,945	61,350	104,295	282,210
Medical Equipment		138,297	82,298	117,568	199,866	538,029
Supplies						
Consumable Supplies on Wards	165,478	437,753	165,512	236,446	401,958	1,407,147
Ancillary Supplies on Wards		558,512	71,588	102,269	173,856	906,225
Facility Costs						
Operating Costs[c]			32,374	46,248	78,622	157,244
Renovation Costs					17,000	17,000
Relocation and Trailer Costs					340,000	340,000
Grand Total	8,250,914	13,129,017	3,311,148	5,008,682	11,068,515	40,768,276

Note. Costs depicted in 2001 dollars based on the *Bed Mobilization Analysis* conducted by WAMC Directorate of Business Operations. The ASAM manpower projection model was used to estimate additional staffing by phase based on an incremental increase to historic inpatient workload. Salaries for each specialty were based on existing like-contract costs. The Logistics Readiness Officer determined equipment and supply requirements on a per-bed basis. Costs were compiled from over 100 vendors. Each phase was calculated on a non-cumulative annual basis even though multiple phases are likely to occur simultaneously. Since the 2001 study, the phased expansion bed increases have changed based on refinements to the mobilization plan. Based on the 2001 study, each cost category was indexed on a per-bed basis which was then used to calculate costs for the revised phases.

[a]Because the hospital is currently staffed to 133 operational beds, the Pre-Phase reflects primarily staffing costs to increase to 155 operational beds. [b]Although it is contingency-specific, staffing for backfill of deploying personnel is estimated to occur during the Pre-Phase and Phase IV. [c]Operating costs include disposing of regulated medical waste, housekeeping, routine maintenance, and linen replenishment.

Appendix I

Average Daily Census

Medical Treatment Facility	Current Operational Beds	Average Daily Census					Available Operational Bed Capacity				
		2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
Fort Bliss, TX (WBAMC)	148	77	73	70	62	64	71	75	78	86	84
Fort Hood, TX (Darnall)	87	72	73	72	68	61	15	14	15	19	26
Fort Sam Houston, TX (BAMC)	209	122	118	120	124	144	87	91	89	85	65
Fort Bragg, NC (Womack)	155	82	92	95	100	95	73	63	60	55	60
Washington, D.C. (WRAMC)	256	171	179	176	191	184	85	77	80	65	72
Fort Benning, GA (Martin)	74	37	37	37	39	41	37	37	37	35	33
Fort Campbell, KY (Blanchfield)	122	34	33	34	34	32	88	89	88	88	90
Fort Gordon, GA (DDEAMC)	192	74	73	73	66	60	118	119	119	126	132
Fort Stewart, GA (Winn)	89	32	29	28	28	30	57	60	61	61	59
Fort Lewis, WA (MAMC)	140	116	114	118	122	132	24	26	22	18	8
Totals:	1472	817	821	823	834	843	655	651	649	638	629

Note. The first step of the Integrated CONUS Medical Operations Plan requires MTF commanders to flush all DoD hospitals within 72-hours of all non-urgent patients. The average daily census for each of the ten MTFs with an inpatient expansion mission reveals the number of potential patients that would require transfer.

Appendix J

Casualty Statistics

	Operation Iraqi Freedom[1]		Operation Enduring Freedom[1]		Operation Desert Storm		Vietnam		Korea		WWII[2]	
	(Number/Percentage)											
Killed	1,291	9.61	152	24.64	143	23.29	42,133	20.99	31,281	22.83	405,399	37.63
Wounded	11,888	88.51	442	71.64	467	76.06	153,303	76.38	103,284	75.38	671,846	62.37
Died of Wounds	252	1.88	23	3.73	4	0.65	5,280	2.63	2,460	1.80	N/A	
Total	13,431		617		614		200,716		137,025		1,077,245	

Note. At the Department of Defense, the Directorate of Information Operations and Reports maintains statistical data on all contingencies, conflicts and wars.

[1]Numbers for Operations Iraqi/Enduring Freedom are inclusive of the period, October 7, 2001 through April 9, 2005. [2]Died of Wounds numbers were not available for WWII.

Appendix K

Acronym Reference List

AD	Active Duty
AGR	Active Guard and Reserve
AMEDD	Army Medical Department
AMOPES	Army Mobilization and Operation Planning and Execution System
ASAM	Army Staffing Assistance Model
AT	Annual Training
CINCUSACOM	Commander-in-Chief, United States Atlantic Command
CMAC	CHAMPUS Maximum Allowable Charge
CONUS	Continental United States
DCSOPS	Deputy Chief of Staff Operations
DCSPER	Deputy Chief of Staff Personnel
DWMMC	Deployed Warrior Medical Management Center
DUIC	Derivative Unit Identification Code
DMOSQ	Duty Military Occupational Specialty Qualified
DOD	Department of Defense
DODD	Department of Defense Directive
DODNMS	Department of Defense National Military Strategy
FCC	Federal Coordinating Center
FEMA	Federal Emergency Management Agency
FORSCOM	Forces Command
FUNCPLAN	Functional Plan

Appendix K (Continued)

Acronym Reference List

GPMRC	Global Patient Movement Requirements Center
GWOT	Global War on Terrorism
HHS	Health and Human Services
ICMOP	Integrated CONUS Medical Operations Plan
JCS	Joint Chiefs of Staff
MEPR	Medical Expense and Performance Reporting System
METL	Mission Essential Task List
MHS	Military Health System
MOBTDA	Mobilization Table of Distribution and Allowances
MOS	Military Occupational Specialty
MTF	Medical Treatment Facility
NDMS	National Disaster Medical System
NG	National Guard
NORTHCOM	Northern Command
OIF	Operation Iraqi Freedom
OPLAN	Operational Plan
PPG	Personnel Policy Guidance
PRC	primary Receiving Center
RC	Reserve Component
SECDEF	Secretary of Defense

Appendix K (Continued)

Acronym Reference List

TRANSCOM	Transportation Command
TRAC2ES	TRANSCOM Regulating, Command and Control Evaluation System
TTHS	Temporary Training Holding Status
UCAPERS	Uniform Chart of Accounts – Personnel Utilization System
UIC	Unit Identification Code
UMR	Unit Manning Report
USAFMSA	United States Army Force Management Support Agency
USAH	United States Army Hospital
USAMEDCOM	United States Army Medical Command
USARC	United States Army Reserve Command
VA	Veterans Administration
WAMC	Womack Army Medical Center
WEBTAADS	Web-based The Army Authorization Document System
WRAMC	Walter Reed Army Medical Center